UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/787,304	02/27/2004	Yoshiharu Ikegawa	03500.101435.	4360

5514   7590   12/19/2008
FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER
MCLEAN, NEIL R

ART UNIT	PAPER NUMBER
2625	

MAIL DATE	DELIVERY MODE
12/19/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _04 December 2008_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _25-30_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _25-30_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on

12/04/2008 has been entered.

Status of Claims

2.   Claims 25-30 are pending in this application.

Independent Claims 25, 26, 27, 28, 29, and 30 have been amended.

Response to Arguments

3.   Regarding Applicant's Argument/Newly Added Claim Limitations (page 12,

lines9-10):

"Mitani, however, fails to disclose or suggest the compression unit, the

calculation unit, or the (first) discrimination unit as claimed."

Examiner's Response:

Mitani discloses a compression unit configured to compress the image data divided by said division unit (e.g., The image formation (rasterize) is performed in order from the intermediate data a formed on the upper side of page, and the output print image memory 5-3 is formed while gradually compressing the intermediate data memory 5-1 downwards, as shown in FIG. 16E as described in Column 19, lines 29-39);

a calculation unit configured to calculate a size of the image data compressed by said compression unit (e.g., The program code or device which performs what is described at Column 19, lines 15-20; the output print image memory 5-3 is created in accordance with the output size, as shown in FIG. 16C, and the image formation (rasterize) which is essentially performed after intermediate data a of one page have been generated is made partially for the intermediate data a, whereby the abnormal termination caused by insufficient memory capacity is avoided.);

a first discrimination unit configured to discriminate, based on the size of the compressed image data calculated by said calculation unit (e.g., The CPU 6 alters the size of intermediate data memory 5-1, using a program of the memory controller 7, as required, or stores the intermediate data generated in the output print image memory 5-3 as described in Column 19, lines 49-56), whether data of the N-th page and the (N+l)th page can be stored in a memory if these data are mixed and transmitted in a printing order (e.g., for the intermediate data requiring a relatively long time to form print image, print image generated is saved in the print image memory (cache buffer) 5-2, and when the intermediate data is processed at the next time, the print image saved in the print image memory 5-2 is reused, thereby omitting the time for print image formation and shortening the time needed for the printing process as described in Column 20, lines 28-34.)

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 25-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Mitani (US 5,737,503) in view of Iizumi et al. (US 6,891,638).

Regarding Claims 1 – 24:   (Cancelled)

Regarding Claim 25: (Currently Amended)

Mitani discloses an information processing apparatus (e.g., Host Computer 1 in Figure 1)

for transmitting data to a printer (e.g., Printer 100 in Figure 1), wherein the data is divided in a

band unit (FIG. 2 illustrates the memory contents of memory device (RAM) 5 of FIG. 1 in a normal state. The

memory device 5 in the normal state is divided into the intermediate data memory (intermediate buffer) 5-1, the print

image memory (cache buffer) 5-2, and the output print image memory (raster buffer) 5-3 of band size, by the memory

location.) in each of a plurality of colors in registration with a position of an image forming

section for each color, in which when an N-th page is printed, areas on the N-th page

overlapping an (N-1)th page, an (N+I)th page, and overlapping no page, are defined as

Na, Nc and Nb (e.g., FIG. 8 is an enlarged view of A portion as shown in FIG. 7. The recording medium

controller 11 has a first mode in which 15a is the first page, 15b is the second page, 15c is the third page and 15d is

the fourth page in the recording sheet 15 as described in Column 11, lines 16-24), respectively, said

information processing apparatus comprising:

a conversion unit configured to convert document data into image data (e.g, Print

Image Generator (Rasterizer) 4-1 in Figure 1 as described in Column 6, lines 56-60);

a division unit configured to divide the image data converted by said

conversion unit in a band unit (e.g., output print image memory 5-3 (raster buffer) in Figure 1 for

memorizing the output print image of band size or one page);

a compression unit configured to compress the image data divided by

said division unit (e.g., The image formation (rasterize) is performed in order from the intermediate data a

formed on the upper side of page, and the output print image memory 5-3 is formed while gradually compressing the

intermediate data memory 5-1 downwards, as shown in FIG. 16E as described in Column 19, lines 29-39);

a calculation unit configured to calculate a size of the image data compressed by

said compression unit (e.g., The program code or device which performs what is described at Column 19,

lines 15-20; the output print image memory 5-3 is created in accordance with the output size, as shown in FIG. 16C,

and the image formation (rasterize) which is essentially performed after intermediate data a of one page have been

generated is made partially for the intermediate data a, whereby the abnormal termination caused by insufficient

memory capacity is avoided.);

a first discrimination unit (e.g., 6 is a controller (CPU) for controlling the entire printing apparatus.)

configured to discriminate based on the size of the compressed image data calculated

by said calculation unit (e.g., The CPU 6 alters the size of intermediate data memory 5-1, using a program of

the memory controller 7, as required, or stores the intermediate data generated in the output print image memory 5-3

as described in Column 19, lines 49-56), whether data of the N-th page and the (N+l)th page can

be stored in a memory (FIG. 9 is a map chart showing the memory contents stored in the memory device 6 in

a normal state, wherein the memory device (RAM) 5 has consecutive memory areas as described in the example 1,

which are normally divided into a first memory area of intermediate data memory (intermediate buffer) 5-1 and a

second memory area of print image memory (cache buffer) 5-2 at a boundary 34, with no output print image memory

(raster buffer) 5-2 formed as described in Column 11, lines 44-51) if these data are mixed and

transmitted in a printing order (e.g., for the intermediate data requiring a relatively long time to form print

image, print image generated is saved in the print image memory (cache buffer) 5-2, and when the intermediate data

is processed at the next time, the print image saved in the print image memory 5-2 is reused, thereby omitting the

time for print image formation and shortening the time needed for the printing process as described in Column 20,

lines 28-34.);

a second discrimination unit (e.g., 7 is a memory controller which stores a program for managing

or changing on demand the ratio of capacities in the intermediate data memory (intermediate buffer) 5-1, the print

image memory (cache buffer) 5-2 and the output print image memory (raster buffer) 5-3 in the memory device 5.)

configured to discriminate whether data in the area Na has been transmitted to the

printer; and

a transmission unit configured to transmit data to printer (8 is an output unit (output

interface) for outputting print image generated to a printer engine 9),

wherein said transmission unit transmits data in the areas Nb and Nc on the N-th

page and data in the area (N+I)a on the (N+I)th page to the printer, if said first

discrimination unit discriminates that the data of the N-th page and the (N+ 1)th page

can be stored in the memory (30 shows a state where there is a sufficient space capacity of memory device

5. At this time, there exist the intermediate data memory (intermediate buffer) 5-1, the print image memory (cache

buffer) 5-2, and the output print image memory (band raster buffer) 5-3 of band size which is smaller than one page

as described in Column 7, lines 55-60) and if said second discrimination unit discriminates that

the data in the area Na has been transmitted to the printer,

wherein said transmission unit transmits data in the areas Na, Nb and Nc on the

N-th page and data in the area (N+I)a on the (N+I)th page to the printer, if said first

discrimination unit discriminates that the data of the N-th page and the (N+I)th page can

be stored in the memory and if said second discrimination unit discriminates that the

data in the area Na has not been transmitted to the printer (e.g., 31 shows a state where a free

memory area is assigned to the intermediate data memory 5-1, because the intermediate data memory (intermediate

buffer) 5-1 is increased, and short of necessary free memory, so that a part of the print image memory (cache buffer)

5-3 is deleted as described in Column 7, lines 61-65),

  wherein said transmission unit transmits data in the areas Nb and Nc on the N-th

page to the printer, if said first discrimination unit discriminates that the data of the N-th

page and the (N+ 1)th page cannot be stored (e.g., FIG. 3 shows how to alter the capacity of each

memory by a program in the memory controller 7, <u>when the space capacity of memory device 5 is insufficient</u>, and a

process of reserving the output print image memory (raster buffer) 5-3 of one page as described in Column 7, lines

49-53) in the memory and if said second discrimination unit discriminates that the data in

the area Na has been transmitted to the printer, and

  wherein said transmission unit transmits data in the areas Na, Nb and Nc on the

N-th page to the printer, if said first discrimination unit discriminates that the data of the

N-th page and the (N+l)th page cannot be stored in the memory (e.g., FIG. 3 shows how to alter

the capacity of each memory by a program in the memory controller 7, <u>when the space capacity of memory device 5</u>

<u>is insufficient</u>, and a process of reserving the output print image memory (raster buffer) 5-3 of one page as described

in Column 7, lines 49-53) and if said second discrimination unit discriminates that the data in

the area Na has not been transmitted to the printer (e.g., If necessary free area can not be reserved

by deleting the control of print image memory (cache buffer) 5-2 as large as possible, the intermediate data memory

(intermediate buffer) 5-1 can not be extended any more as described in Column 7, line 66 – Column 8, line 2).

  Mitani does not disclose expressly a printer that generates data in a band unit in

each of a plurality of colors and prints data based on the generated data.

Iizumi et al. discloses a printer (Shown in Figure 1) that generates data in a band (FIG. 5 is a flow chart showing a banding determination process) unit in each of a plurality of colors and prints data based on the generated data (one preferred embodiment of the present invention provides an image processing apparatus comprising rendering means for rendering data in a first color space and data in a second color space, and a plurality of image forming means for forming images in units of colors of the rendered image data.)

Iizumi et al. and Mitani are combinable because they are from the same field of endeavor of image processing; e.g., both references disclose methods of rasterized image processing control.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a color image forming apparatus that generates data in a band unit in each of a plurality of colors and prints data based on the generated data.

The suggestion/motivation for doing so would have been to include color to a printer's capabilities in order create more pleasing documents.

Therefore, it would have been obvious to combine Iizumi et al.'s Color Printer with Mitani's Control Method for a Printer to obtain the invention as specified in claim 25.

Regarding Claim 27: (Currently Amended)

Claim 25 teaches the apparatus. Claim 27 is obvious over Iizumi and Mitani because the operation of the apparatus is achieved using the steps of Claim 25.

Regarding Claim 29:   (Currently Amended)

Claim 27 teaches the method. Claim 29 is obvious over Iizumi and Mitani

because a computer-readable medium containing computer executed instructions is

achieved using the method steps of Claim 27.

Regarding Claim 26. (Currently Amended)

An information processing apparatus (e.g., Host Computer 1 in Figure 1) for transmitting

data to a printer (e.g., Printer 100 in Figure 1), wherein the data is divided in a band unit (FIG. 2

illustrates the memory contents of memory device (RAM) 5 of FIG. 1 in a normal state. The memory device 5 in the

normal state is divided into the intermediate data memory (intermediate buffer) 5-1, the print image memory (cache

buffer) 5-2, and the output print image memory (raster buffer) 5-3 of band size, by the memory location.) in each

of a plurality of colors in registration with a position of an image forming section for each

color, said information processing apparatus comprising:

a conversion unit configured to convert document data into image data (e.g, Print

Image Generator (Rasterizer) 4-1 in Figure 1 as described in Column 6, lines 56-60);

a division unit configured to divide the image data converted by said

conversion unit in a band unit (e.g., output print image memory 5-3 (raster buffer) in Figure 1 for

memorizing the output print image of band size or one page);

a compression unit configured to compress the image data divided by

said division unit (e.g., The image formation (rasterize) is performed in order from the intermediate data a

formed on the upper side of page, and the output print image memory 5-3 is formed while gradually compressing the

intermediate data memory 5-1 downwards, as shown in FIG. 16E as described in Column 19, lines 29-39);

a calculation unit configured to calculate a size of the image data compressed by

said compression unit (e.g., The program code or device which performs what is described at Column 19,

lines 15-20; the output print image memory 5-3 is created in accordance with the output size, as shown in FIG. 16C, and the image formation (rasterize) which is essentially performed after intermediate data a of one page have been generated is made partially for the intermediate data a, whereby the abnormal termination caused by insufficient memory capacity is avoided.);

a discrimination unit (e.g., 6 is a controller (CPU) for controlling the entire printing apparatus.) configured to discriminate based on the size of the compressed image data calculated by said calculation unit (e.g., The CPU 6 alters the size of intermediate data memory 5-1, using a program of the memory controller 7, as required, or stores the intermediate data generated in the output print image memory 5-3 as described in Column 19, lines 49-56), whether data of the N-th page and the (N+I)th page can be stored in a memory (FIG. 9 is a map chart showing the memory contents stored in the memory device 6 in a normal state, wherein the memory device (RAM) 5 has consecutive memory areas as described in the example 1, which are normally divided into a first memory area of intermediate data memory (intermediate buffer) 5-1 and a second memory area of print image memory (cache buffer) 5-2 at a boundary 34, with no output print image memory (raster buffer) 5-2 formed as described in Column 11, lines 44-51) if these data are mixed and transmitted in a printing order (e.g., for the intermediate data requiring a relatively long time to form print image, print image generated is saved in the print image memory (cache buffer) 5-2, and when the intermediate data is processed at the next time, the print image saved in the print image memory 5-2 is reused, thereby omitting the time for print image formation and shortening the time needed for the printing process as described in Column 20, lines 28-34.); and

a transmission unit configured to transmit data to the printer (8 is an output unit (output interface) for outputting print image generated to a printer engine 9),

wherein said transmission unit transmits data of the (N+I)th page to the printer after completion of transmission of data of the N-th page, if said discrimination unit discriminates that the data of the N-th page and the (N+ 1)th page cannot be stored in the memory (e.g., FIG. 3 shows how to alter the capacity of each memory by a program in the memory controller

7, <u>when the space capacity of memory device 5 is insufficient</u>, and a process of reserving the output print image

memory (raster buffer) 5-3 of one page as described in Column 7, lines 49-53), and

wherein said transmission unit transmits data of the (N+1)th page to the printer

before completion of transmission of data of the N-th page, if said discrimination unit

discriminates that the data of the N-th page and the (N+ 1)th page can be stored in the

memory (30 shows a state where there is a sufficient space capacity of memory device 5. At this time, there exist

the intermediate data memory (intermediate buffer) 5-1, the print image memory (cache buffer) 5-2, and the output

print image memory (band raster buffer) 5-3 of band size which is smaller than one page as described in Column 7,

lines 55-60).

Mitani does not disclose expressly a printer that generates data in a band unit in

each of a plurality of colors and prints data based on the generated data.

Iizumi et al. discloses a printer (Shown in Figure 1) that generates data in a band (FIG.

5 is a flow chart showing a banding determination process) unit in each of a plurality of colors and

prints data based on the generated data (one preferred embodiment of the present invention provides

an image processing apparatus comprising rendering means for rendering data in a first color space and data in a

second color space, and a plurality of image forming means for forming images in units of colors of the rendered

image data.)

Iizumi et al. and Mitani are combinable because they are from the same field of

endeavor of image processing; e.g., both references disclose methods of rasterized

image processing control.

At the time of the invention, it would have been obvious to a person of ordinary

skill in the art to use a color image forming apparatus that generates data in a band unit

in each of a plurality of colors and prints data based on the generated data.

The suggestion/motivation for doing so would have been to include color to a printer's capabilities in order create more pleasing documents.

Therefore, it would have been obvious to combine Iizumi et al.'s Color Printer with Mitani's Control Method for a Printer to obtain the invention as specified in claim 25.

Regarding Claim 28: (Currently Amended)

Claim 26 teaches the apparatus. Claim 28 is obvious over Iizumi and Mitani because the operation of the apparatus is achieved using the steps of Claim 26.

Regarding Claim 30:   (Currently Amended)

Claim 28 teaches the method. Claim 30 is obvious over Iizumi and Mitani because a computer-readable medium containing computer executed instructions is achieved using the method steps of Claim 28.

Conclusion

6.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kawata et al. (US 6,219,149) discloses a print processing apparatus realizes high speed processing of input data which includes various types of drawing objects such as images, graphics and characters. In the apparatus, input data

generated by an input data generating unit is converted into intermediate data in an

intermediate data generating element.

Examiner Notes

7.   The Examiner cites particular columns and line numbers in the references as

applied to the claims above for the convenience of the applicant. Although the specified

citations are representative of the teachings in the art and are applied to the specific

limitations within the individual claim, other passages and figures may apply as well. It

is respectfully requested that, in preparing responses, the applicant fully considers the

references in its entirety as potentially teaching all or part of the claimed invention, as

well as the context of the passage as taught by the prior art or as disclosed by the

Examiner.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Neil R. McLean whose telephone number is (571)270-

1679. The examiner can normally be reached on Monday through Friday 7:30AM-

4:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, David K. Moore can be reached on 571.272.7437. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Neil R. McLean/

Examiner, Art Unit 2625

/David K Moore/

Supervisory Patent Examiner, Art Unit 2625